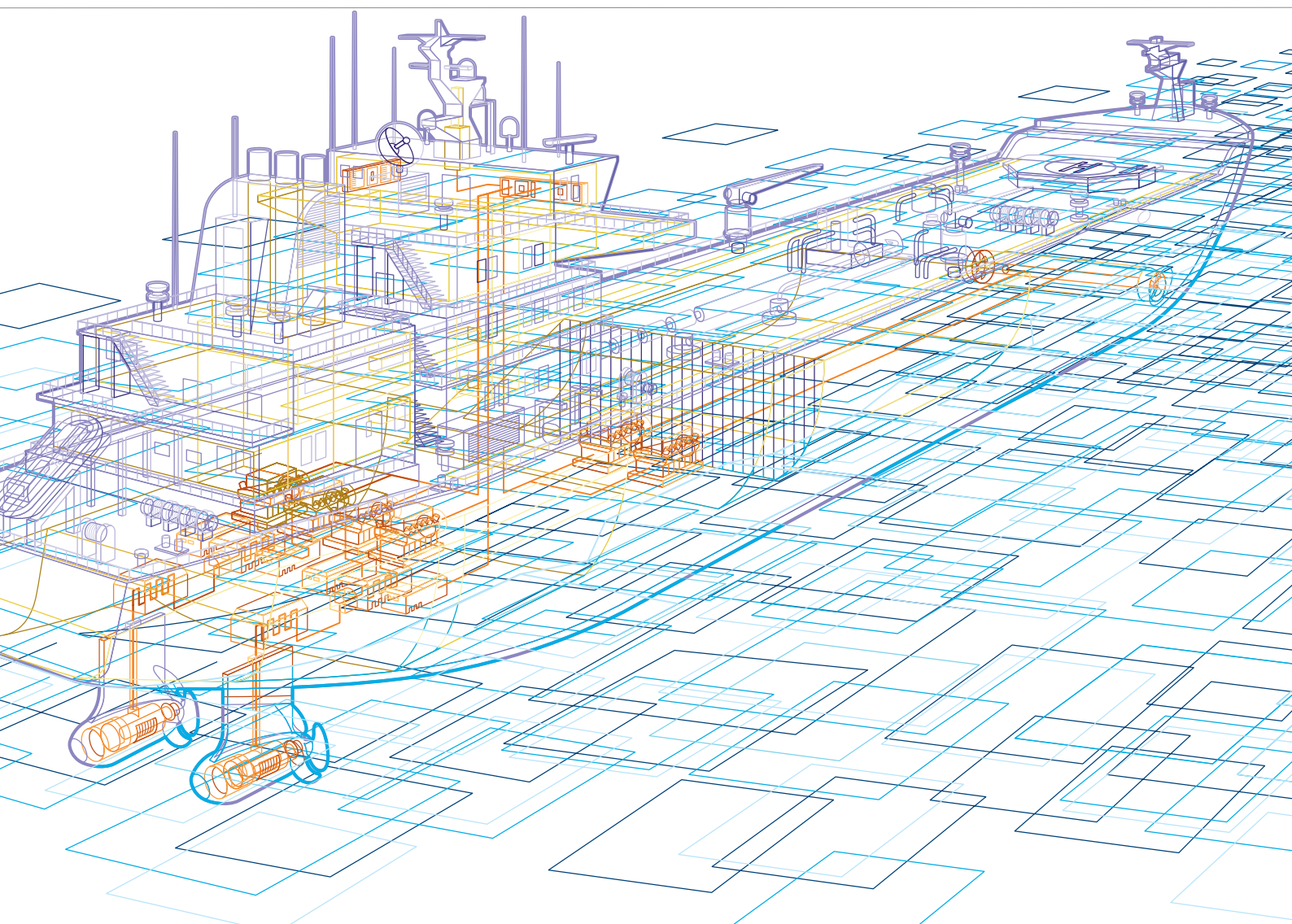


MEDIUM VOLTAGE SERVICE

2017 Life Cycle Management

ABB Italy medium voltage products
for marine application



Life Cycle process

Product status plan

ABB's products are designed for continuous evolution. It is ABB's goal to protect our customers' investment beyond the life-cycles of the underlying platform products. Life Cycle Management process is split into four steps in order to allow both ABB and the customers to properly manage the transition from Active to Obsolete in a long term way and avoid a too short swap which may generate critical situations.

Scope of this brochure is to provide life cycle status of all products under responsibility of our Service Center:









ABB S.p.A.

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Italy

Our Service Center is responsible for:

- All designed and manufactured medium voltage product with SACE logo
- Retrofit apparatus for replacing ABB HPA gas insulated circuit breakers and contactors designed and manufactured by ABB Sweden for fitting SafeSix switchgear.

The document is updated once per year according to the latest announced shifts. Special care of the obsolete products is taken in order to support the customers either with spare parts or retrofit solutions with active equipment.

Status	Name	Product	Type	Current status start date	Next shift
Active  Equipment: available  Spare parts: available	HD4 ⁽¹⁾	Circuit-breaker	SF6	-	-
	VD4	Circuit-breaker	Vacuum	-	-
	VMAX	Circuit-breaker	Vacuum	-	-
	VSC	Contacteur	Vacuum	-	-
	REF542plus R3.0 SP3 V4F11x ⁽²⁾	Relay	Digital	-	-
	UniGear	Switchgear	AIS	-	-
	UniSec	Switchgear	AIS	-	-
Classic  Equipment: available  Spare parts: available	HD4/C	Circuit-breaker	SF6	01/09/2011	-
	V-Contact V	Contacteur	Vacuum	01/09/2011	-
	REF542plus R3.0 SP1 V4F09x ⁽³⁾	Relay	Digital	Q1/2017	-
	REF542plus R3.0 V4F08x ⁽³⁾	Relay	Digital	Q4/2012	-
	REF542plus R2.6SP1 V4F07x ⁽³⁾	Relay	Digital	Q4/2010	-
	REF542plus R2.6 V4E06x ⁽³⁾	Relay	Digital	Q1/2010	-
	REF542plus R2.5 V4E03x ⁽³⁾	Relay	Digital	Q1/2010	-
Limited  Equipment: not ensured  Spare parts: available	REF542plus release 2.0 (V4D02x) ⁽³⁾	Relay	Digital	Q3/2015	-
	UniMotor (4)	Switchgear	AIS	-	-
	UniSafe	Switchgear	AIS	01/01/2006	-
	Univer C	Switchgear	AIS	-	-
	Univer G12	Switchgear	AIS	-	-
Obsolete  Equipment: not available  Spare parts: not ensured	DIARC (5)	Circuit-breaker	Magnetic-air	-	-
	HA1-2-3	Circuit-breaker	SF ₆	31/03/1999	-
	H-Breaking	Circuit-breaker	SF ₆	-	-
	SFA	Circuit-breaker	SF ₆	-	-
	VRB	Circuit-breaker	Vacuum	-	-
	SRC	Contacteur	SF ₆	01/04/2012	-
	VRC	Contacteur	Vacuum	31/03/1999	-
	REF542plus release 1.x	Relay	Digital	-	-
	REF542	Relay	Digital	01/01/2010	-
	SCU	Relay	Digital	01/01/2010	-
	UniArc	Switchgear	AIS	01/07/2015	-

Note:

- 1) All variants with exception of HD4/C which are Classic
- 2) DNV Type approval in force
- 3) DNV Type approval expired in 2009
- 4) Replacement of enclosure manufactured after 1985 is available
- 5) Circuit breakers manufactured before 1984 include asbestos components inside the arc-chutes

Spare parts and retrofit solution availability

Products details

Spare parts have been categorized into groups as per the following:

- Poles: assembly parts in which main interruptive components are installed in
- Mechanism: operating mechanism which drives the interruptive parts
- Auxiliary equipment: LV equipment onboard the operating mechanism (spring charging motor, coils, magnets, contacts, etc.)
- Tulip contacts: moving contacts onboard the apparatus arms
- Complete device: for those products which cannot be split into sub-assemblies
- Monoblocs: spouts, shutters and branches
- Earthing switch: earthing switch and relevant accessories

- Line disconnecter: line disconnecter and relevant accessories
- LV compartment devices: protection relay, auxiliary relays, MCB and terminal board

The following charts give an overview of the currently available spare parts in our stock and retrofit solutions for replacing phased-out equipment with active products. Spare parts in "Not ensured" status could become "Not available" during the year depending on requests. Please contact ABB for checking availability.

Obsolete apparatus and relay				Active products		Spare parts		
Name	Product	Type	Retrofit solution	Poles	Mechanism	Auxiliary equipment	Tulip contacts	Complete device
DIARC ^{(1) (3)}	Circuit-breaker	Magnetic-air	HD4, VD4					
HA1-2-3	Circuit-breaker	SF ₆	HD4, VD4					
H-Breaking	Circuit-breaker	SF ₆	HD4, VD4					
REF542 ⁽²⁾	Relay	Digital	REF542plus release 3.0, Relion® family					
REF542plus release 1.x ⁽²⁾	Relay	Digital	REF542plus release 3.0, Relion® family					
SCU ⁽²⁾	Relay	Digital	REF542plus release 3.0, Relion® family					
SFA	Circuit-breaker	SF ₆	HD4, VD4					
SRC ⁽²⁾	Contacteur	SF ₆	V-Contact VSC-SRC Retrofit					
VRB ⁽⁴⁾	Circuit-breaker	Vacuum	HD4, VD4					
VRC ^{(2) (4)}	Contacteur	Vacuum	V-Contact family					

Obsolete switchgears				Active products		Spare parts		
Name	Product	Type	Replacement solution	Monoblocs	Earthing switch	Line disconnecter	LV compartment devices	Circuit breaker or retrofit solution (*)
UniArc ⁽²⁾	Switchgear	GIS	UniGear			n.a		

Notes:

1) Arc chambers are not available

2) Replacement with site adaptations

3) AE mechanism and its components are not available

4) Vacuum interrupters are not available

(*) Please refer to previous tables for checking availability of circuit breakers and relevant spare parts or retrofit solutions

	Not available
	Not ensured
	Available
	Not applicable

Lyfe cycle services

Tailor-made services for every life cycle stage

The whole world of ABB services hereby represented is at your disposal for making the best use of ABB medium voltage assets at every life cycle stage:

Active

- Long-term support thanks to Power Care customer support agreements
- Extended warranty application
- Worldwide Service competence, ready for prompt actuation
- Certified ABB spare parts ready in stock to guarantee their availability throughout the product life time (Active, Classic and Limited stages)

Classic

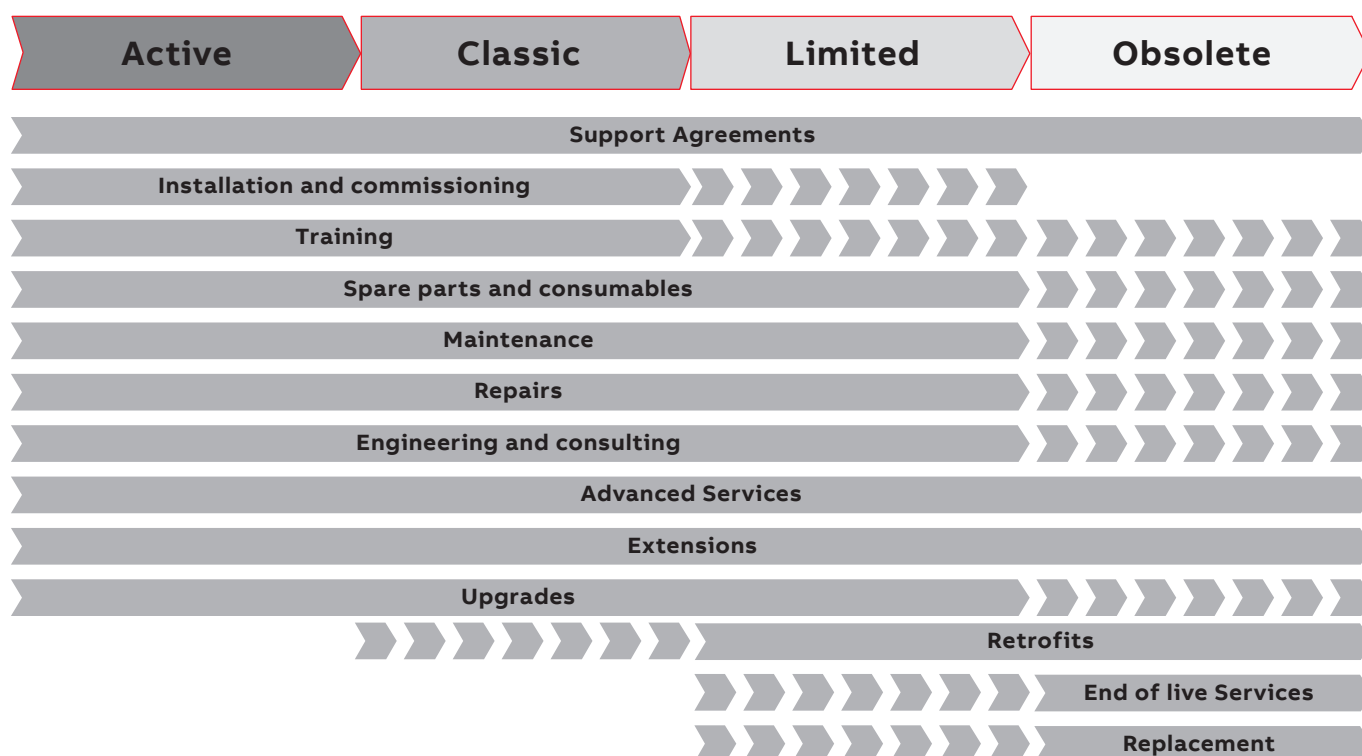
- “Last Buy” opportunity of complete equipment
- Good chance to obtain spare parts as per active products conditions
- Best time to keep equipment healthy via Power Care customer support agreements
- Call for training with wide coverage thanks to worldwide footprint still available.

Limited

- Spare parts fully available
- Retrofit solutions can already be applied
- Power Care customer support agreements designed to keep the service experience as per active products

Obsolete

- Spare parts could be still accessible on request.
- Retrofit solutions are usually available. The use of active products allows a new life to be given to the plants.
- Our consultancy services are always available for supporting cost-effective and optimized investments. Special care is given to obtain a soft shift to new applications and solutions.



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For more information please contact:



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Your sales contact:

www.abb.com/contacts

More product information:

www.abb.com/productguide

More service information:

www.abb.com/service

